

ANNUAL RIFLE TRAINING DATABOOK SERVICE RIFLE/ CARBINE, RIFLE COMBAT OPTIC

RANK/NAME		SSN
ORGANIZATION		BLOOD TYPE
WPN SERIAL NO.		
DETAIL NO.	RANGE	DATE

WPN NO./TYPE		
BZO		
FRONT ELEV	REAR ELEV	WIND

NAVMC 11660 05-09) (Previous editions are obsolete)

SN: 0109-LF-128-0300 U/I: PG OF 100BX



OVERVIEW



- Importance of the Data Book to the Shooter
- Importance of the Data Book to the Coach
- Data Book Analysis



IMPORTANCE OF THE DATA BOOK TO THE SHOOTER

- Can not fire with out the data book.
- Precise record of wind conditions.
- Record the shooter's observations regarding the applications of basic marksmanship fundamentals.
- Record wind holds, shot calls, shot placement, weather.



BEFORE FIRING INFORMATION



- **Ensure YOU fill out YOUR pre-firing data.**
- **Some data can be filled out on the ready line to save time on the firing line.**

ZEROING THE RCO

- 1. LBS RCO PRIOR TO SHOOTING**
- 2. ZERO AT 36 YARDS (THIS IS REQUIRED TO GET ACCURATE ZERO)**
- 3. LOCATE THE CENTER OF THE SHOT GROUP**
- 4. DETERMINE NUMBER OF ELEVATION CLICKS REQUIRED TO CENTER SHOT GROUP.**
- 5. MAKE ELEVATION SIGHT ADJUSTMENT**
- 4. DETERMINE NUMBER OF WINDAGE CLICKS REQUIRED TO CENTER SHOT GROUP**
- 5. MAKE WINDAGE ADJUSTMENT**
- 6. CONFIRM ADJUSTMENT BY FIRING ANOTHER GROUP**
NOTE (THE FIRST TWO SHOTS OF CONFIRMATION GROUP MY BE OFF CENTER DUE TO THE PRISMS BEING SET THROUGH RECOIL)
- 7. CONTINUE STEPS UNTIL THE SHOT GROUPS ARE POA/POI. WHEN THIS IS ACHIEVED YOUR RCO IS ZEROED.**
- 8. CONFIRM AT 100 METERS**
- 9. REFINE AT 200 YARD LINE**



Analysis of Tri-Fire:

- **Ensure a solid zero is established.**
- **Ensure shooters call and plot shots in data book.**
- **Ensure after-fire data is completed.**

BEFORE FIRING

100-YARD TRI-FIRE

SITTING

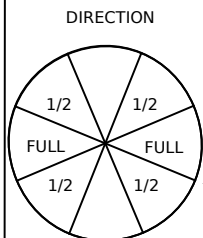
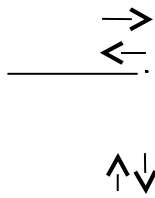
CORRECT HOLD

PLUS

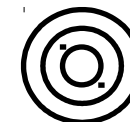
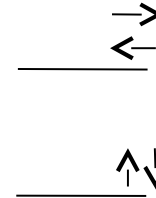
WIND

=

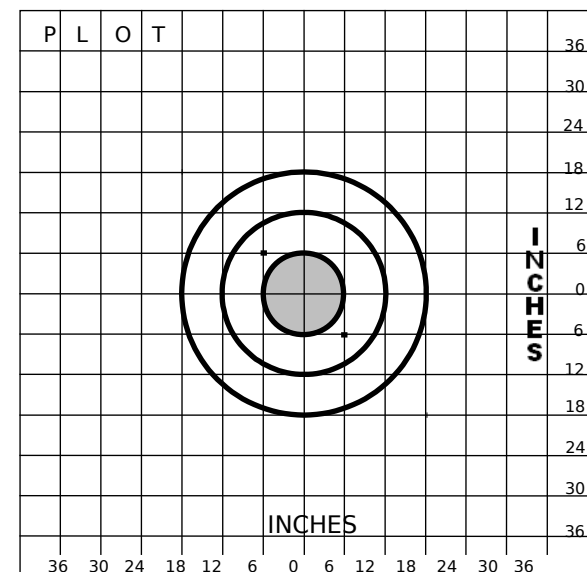
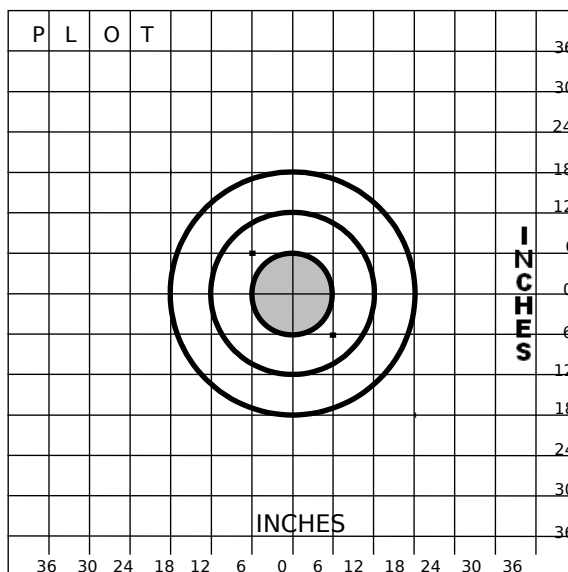
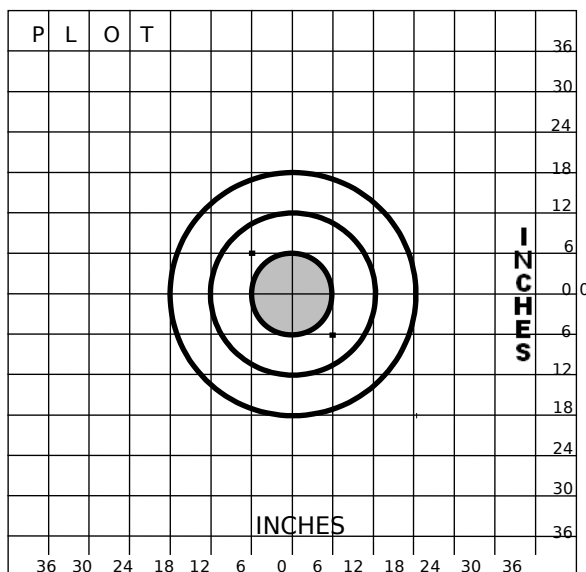
WITH WIND HOLD

SERVICE
RIFLE
CARBINE

VALUE	5 MPH	10 MPH	15 MPH	20 MPH
FULL	2	5	7	9
HALF	1	2	3	4
FULL	3	5	8	10
HALF	1	2	4	5



DURING FIRING



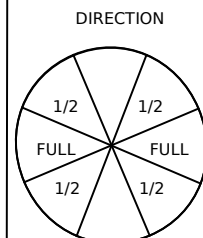
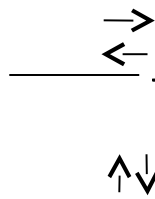
CORRECTED HOLD

MINUS

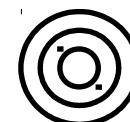
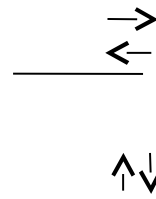
WIND

=

NEW NO WIND HOLD

SERVICE
RIFLE
CARBINE

VALUE	5 MPH	10 MPH	15 MPH	20 MPH
FULL	2	5	7	9
HALF	1	2	3	4
FULL	3	5	8	10
HALF	1	2	4	5



RECORDING DATA/CALLING SHOTS

- CALL THE SHOT BY MARKING THE LAST PLACE THEY REMEMBER SEEING THE CLEAR BULLET DROP COMP, BEFORE THE SHOT BREAKS.
- SHOT MAY NOT ALWAYS BE CALLED AT CENTER MASS.

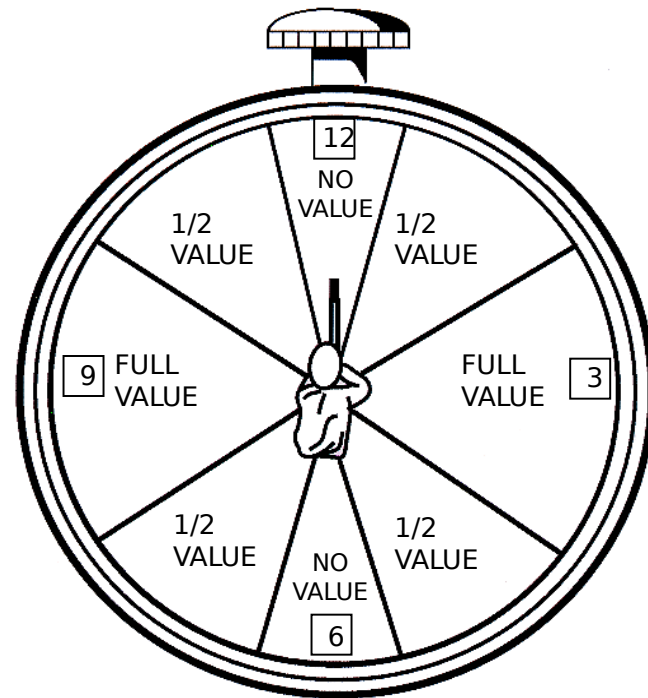
9



WIND CLASSIFICATION

DIRECTION: Determine wind direction by observing the direction vegetation is moving, by feeling the wind blow against the body, or by observing the direction of a flag.

VALUE: Winds are classified according to the direction from which they are blowing in relation to the direction of fire. The clock system indicates wind direction and value. The target is always at 12 o'clock.





WIND VELOCITY

OBSERVATION METHOD

Under 3 mph- The wind can hardly be felt on the face, but the presence of a slight wind can be detected by drifting smoke.

3 to 5 mph- Wind can be felt lightly on the face.

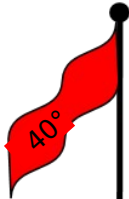
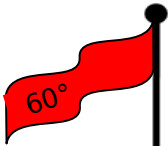
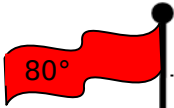

5 to 8 mph- Wind keeps tree leaves in constant motion.

8 to 12 mph- Wind will raise dust and loose paper.

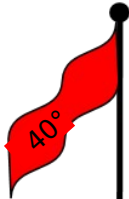
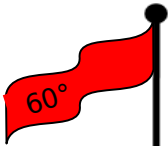
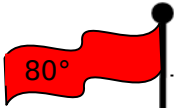

12 to 15 mph- Wind will cause small trees to sway.

15 to 25 mph- Wind will cause large trees to sway.

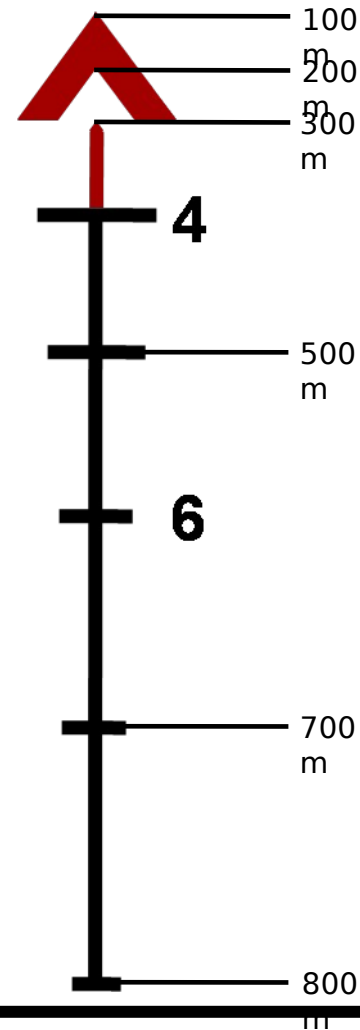
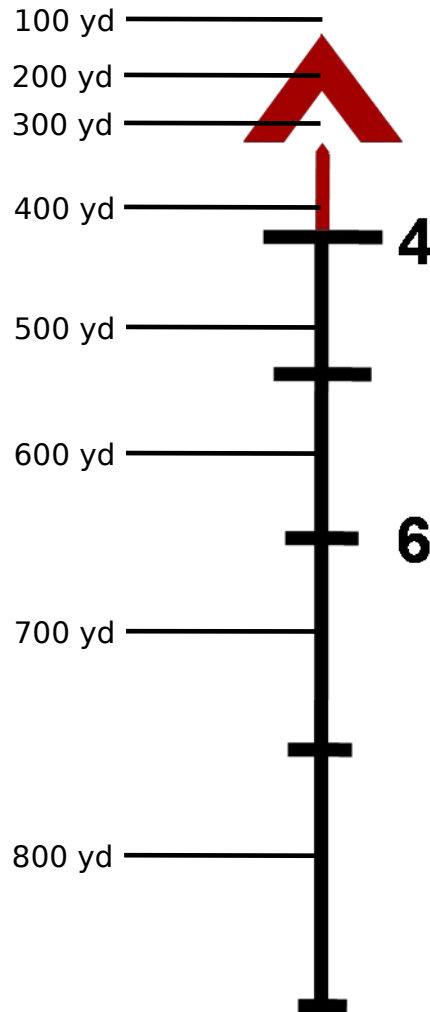
WINDAGE HOLDS IN INCHES M16A4

	Wind speed is determined by the angle of the flag. The different speeds at each angle can be approximated based on how fast the flag flutters at each angle.	 40°		 60°		 80°		 90°	
		5 MPH		10 MPH		15 MPH		20 MPH	
RANGE YARDS		WIND VALUE		WIND VALUE		WIND VALUE		WIND VALUE	
		FULL	HALF	FULL	HALF	FULL	HALF	FULL	HALF
200		2 in	1 in	5 in	2 in	7 in	3 in	9 in	4 in
300		5 in	2 in	11 in	5 in	16 in	8 in	22 in	11 in
500		17 in	8 in	35 in	17 in	52 in	26 in	69 in	34 in

WINDAGE HOLDS IN INCHES M4

	Wind speed is determined by the angle of the flag. The different speeds at each angle can be approximated based on how fast the flag flutters at each angle.	 40°		 60°		 80°		 90°	
		5 MPH		10 MPH		15 MPH		20 MPH	
RANGE YARDS		WIND VALUE		WIND VALUE		WIND VALUE		WIND VALUE	
		FULL	HALF	FULL	HALF	FULL	HALF	FULL	HALF
200		3 in	1 in	5 in	2 in	8 in	4 in	10 in	5 in
300		6 in	3 in	13 in	6 in	16 in	8 in	25 in	12 in
500		20 in	10 in	40 in	20 in	60 in	30 in	81 in	40 in

YARDS vs METER HOLDS



THE SHOOTER HAS DETERMINED THE WIND IS BLOWING STRAIGHT TOWARDS THE TARGET


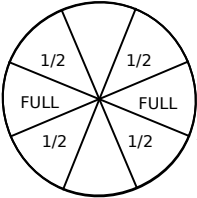


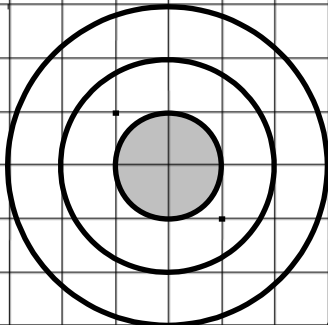

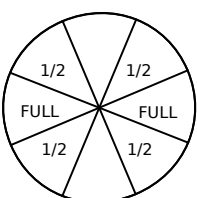
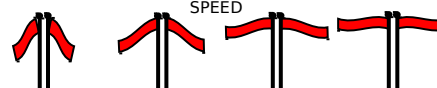

DAY 1 TABLE 1

BEFORE FIRING			200-YARD SLOW FIRE			SITTING																										
TRUE ZERO			plus WIND			ZERO																										
FRONT ELEVATION	REAR ELEVATION	WIND	DIRECTION SPEED 	<table border="1"> <thead> <tr> <th>VALUE</th> <th>5 MPH</th> <th>10 MPH</th> <th>15 MPH</th> <th>20 MPH</th> </tr> </thead> <tbody> <tr> <td>SERVICE FULL</td> <td>2</td> <td>3</td> <td>5</td> <td>6</td> </tr> <tr> <td>RIFLE HALF</td> <td>1</td> <td>1</td> <td>2</td> <td>3</td> </tr> <tr> <td>FULL</td> <td>2</td> <td>4</td> <td>7</td> <td>9</td> </tr> <tr> <td>CARBINE HALF</td> <td>1</td> <td>2</td> <td>4</td> <td>5</td> </tr> </tbody> </table>	VALUE	5 MPH	10 MPH	15 MPH	20 MPH	SERVICE FULL	2	3	5	6	RIFLE HALF	1	1	2	3	FULL	2	4	7	9	CARBINE HALF	1	2	4	5	FRONT ELEVATION	REAR ELEVATION	WIND
VALUE	5 MPH	10 MPH			15 MPH	20 MPH																										
SERVICE FULL	2	3			5	6																										
RIFLE HALF	1	1			2	3																										
FULL	2	4	7	9																												
CARBINE HALF	1	2	4	5																												
_____ ↑	M16A2	_____ R	_____ ↑	M16A2	_____ R																											
2 ↓	8/3- 2	6 L	2 ↓	8/3- 2	6 L																											
	M16A4/M4			M16A4/M4																												
	6/3+ _____			6/3+ _____																												
	6/3- _____			6/3- _____																												
DURING FIRING			PLOT			REMARKS																										
CALL																																
	1	2							3																							
ELEVATION																																
WINDAGE																																
	4	5																														
ELEVATION																																
WINDAGE																																
AFTER FIRING									without WIND			TRUE ZERO																				
FRONT ELEVATION	REAR ELEVATION	WIND	DIRECTION SPEED 	<table border="1"> <thead> <tr> <th>VALUE</th> <th>5 MPH</th> <th>10 MPH</th> <th>15 MPH</th> <th>20 MPH</th> </tr> </thead> <tbody> <tr> <td>SERVICE FULL</td> <td>2</td> <td>3</td> <td>5</td> <td>6</td> </tr> <tr> <td>RIFLE HALF</td> <td>1</td> <td>1</td> <td>2</td> <td>3</td> </tr> <tr> <td>FULL</td> <td>2</td> <td>4</td> <td>7</td> <td>9</td> </tr> <tr> <td>CARBINE HALF</td> <td>1</td> <td>2</td> <td>4</td> <td>5</td> </tr> </tbody> </table>	VALUE	5 MPH	10 MPH	15 MPH	20 MPH	SERVICE FULL	2	3	5	6	RIFLE HALF	1	1	2	3	FULL	2	4	7	9	CARBINE HALF	1	2	4	5	FRONT ELEVATION	REAR ELEVATION	WIND
VALUE	5 MPH	10 MPH			15 MPH	20 MPH																										
SERVICE FULL	2	3			5	6																										
RIFLE HALF	1	1			2	3																										
FULL	2	4	7	9																												
CARBINE HALF	1	2	4	5																												
_____ ↑	M16A2	_____ R	_____ ↑	M16A2	_____ R																											
	8/3+ _____			8/3+ _____																												
	8/3- _____			8/3- _____																												
_____ ↓	M16A4/M4	_____ L		M16A4/M4	_____ L																											
	6/3+ _____			6/3+ _____																												
	6/3- _____			6/3- _____																												

****WINDAGE AND ELEVATION ADJUSTMENTS AT 200 yds:
WINDAGE 1 CLICK = 1"

REAR SIGHT ELEVATION M16A2 1 CLICK = 2" M16A4 1 CLICK = 1" M4 1CLICK= 1 1/2"

FRONT SIGHT ELEVATION SERVICE RIFLE 1 CLICK= 2-3/4" CARBINE 1 CLICK= 3-3/4"

BEFORE FIRING		200-YARD SLOW FIRE (DAY ONE)										SITTING																								
NO WIND HOLD		PLUS		WIND		=		WITH WIND HOLD																												
	<div style="display: flex; flex-direction: column; align-items: center;"> <div style="display: flex; justify-content: space-around; width: 100px;"> → ←</div> <div style="display: flex; justify-content: space-around; width: 100px;"> ↑ ↓</div> </div>	DIRECTION 		SERVICE RIFLE CARBINE		SPEED 				<div style="display: flex; flex-direction: column; align-items: center;"> <div style="display: flex; justify-content: space-around; width: 100px;"> → ←</div> <div style="display: flex; justify-content: space-around; width: 100px;"> ↑ ↓</div> </div>																										
						<table border="1" style="font-size: 8px; border-collapse: collapse;"> <thead> <tr> <th>VALUE</th> <th>5 MPH</th> <th>10 MPH</th> <th>15 MPH</th> <th>20 MPH</th> </tr> </thead> <tbody> <tr> <td>FULL</td> <td>2</td> <td>5</td> <td>7</td> <td>9</td> </tr> <tr> <td>HALF</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> <tr> <td>FULL</td> <td>3</td> <td>5</td> <td>8</td> <td>10</td> </tr> <tr> <td>HALF</td> <td>1</td> <td>2</td> <td>4</td> <td>5</td> </tr> </tbody> </table>		VALUE	5 MPH	10 MPH	15 MPH	20 MPH	FULL	2	5	7	9	HALF	1	2	3	4	FULL	3	5	8	10	HALF	1	2	4	5				
VALUE	5 MPH	10 MPH	15 MPH	20 MPH																																
FULL	2	5	7	9																																
HALF	1	2	3	4																																
FULL	3	5	8	10																																
HALF	1	2	4	5																																
DURING FIRING				REMARKS																																
ELEV HOLD WIND				P	L	O	T									36																				
CALL	1	2	3									30																								
ELEV HOLD WIND												36																								
CALL	4	5										24																								
ELEV HOLD WIND												18																								
CALL												12																								
ELEV HOLD WIND												6																								
CALL												0																								
ELEV HOLD WIND												6																								
CALL												12																								
ELEV HOLD WIND												18																								
CALL				24																																
ELEV HOLD WIND				30																																
CALL				36																																
INCHES												INCHES																								
AFTER FIRING																																				
CORRECTED HOLD				MINUS		WIND		=		NEW NO WIND HOLD																										
	<div style="display: flex; flex-direction: column; align-items: center;"> <div style="display: flex; justify-content: space-around; width: 100px;"> → ←</div> <div style="display: flex; justify-content: space-around; width: 100px;"> ↑ ↓</div> </div>	DIRECTION 		SERVICE RIFLE CARBINE		SPEED 				<div style="display: flex; flex-direction: column; align-items: center;"> <div style="display: flex; justify-content: space-around; width: 100px;"> → ←</div> <div style="display: flex; justify-content: space-around; width: 100px;"> ↑ ↓</div> </div>																										
						<table border="1" style="font-size: 8px; border-collapse: collapse;"> <thead> <tr> <th>VALUE</th> <th>5 MPH</th> <th>10 MPH</th> <th>15 MPH</th> <th>20 MPH</th> </tr> </thead> <tbody> <tr> <td>FULL</td> <td>2</td> <td>5</td> <td>7</td> <td>9</td> </tr> <tr> <td>HALF</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> <tr> <td>FULL</td> <td>3</td> <td>5</td> <td>8</td> <td>10</td> </tr> <tr> <td>HALF</td> <td>1</td> <td>2</td> <td>4</td> <td>5</td> </tr> </tbody> </table>		VALUE	5 MPH	10 MPH	15 MPH	20 MPH	FULL	2	5	7	9	HALF	1	2	3	4	FULL	3	5	8	10	HALF	1	2	4	5				
VALUE	5 MPH	10 MPH	15 MPH	20 MPH																																
FULL	2	5	7	9																																
HALF	1	2	3	4																																
FULL	3	5	8	10																																
HALF	1	2	4	5																																



RECORDING DATA/CALLING SHOTS

- CALL THE SHOT BY MARKING THE LAST PLACE THEY REMEMBER SEEING THE CLEAR BULLET DROP COMP, BEFORE THE SHOT BREAKS.
- SHOT MAY NOT ALWAYS BE CALLED AT CENTER MASS.



PLOTTING SHOTS



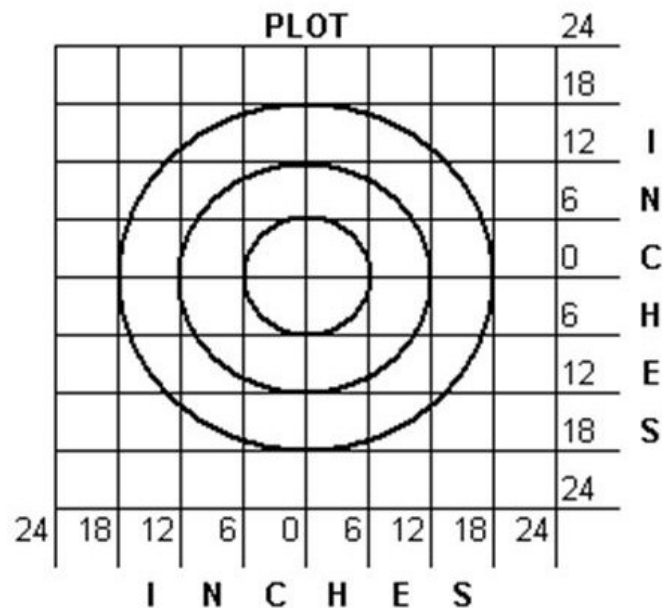
- PLOT THE SHOTS USING NUMBERS
- USE THE REMARKS BOX TO WRITE WHATEVER THEY MAY OR MAY NOT HAVE BEEN DOING WHILE FIRING THE SHOT.
- USE THE SHOT BEHIND METHOD TO SAVE TIME WHILE FIRING.



1ST SHOT CALLED



DURING FIRING			
CALL			
	1	2	3
ELEVATION			
WINDAGE			
	4	5	
ELEVATION			
WINDAGE			



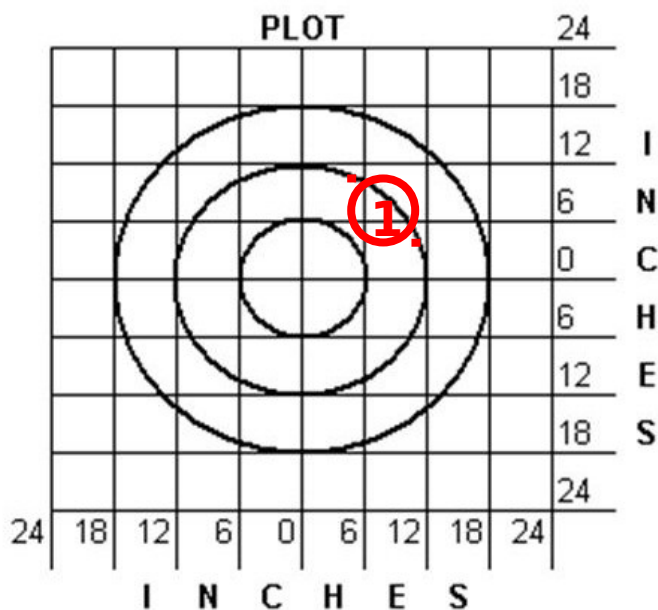
REMARKS
AIM CENTER MASS



2ND SHOT CALLED 1ST SHOT PLOTTED



DURING FIRING			
CALL			
	1	2	3
ELEVATION			
WINDAGE			
	4	5	
ELEVATION			
WINDAGE			



REMARKS
<p>AIM CENTER MASS</p> <p>2ND SHOT IT'S COLD OUT HERE STOP SHAKING</p>



ENSURE THEY MAKE AN AFTER-FIRING WIND CALL AND APPLY CHANGES TO THEIR SIGHTS

DAY 1 TABLE 1

BEFORE FIRING			200-YARD SLOW FIRE			SITTING																													
TRUE ZERO			WIND			ZERO																													
FRONT ELEVATION	REAR ELEVATION	WIND	DIRECTION	SPEED				FRONT ELEVATION	REAR ELEVATION	WIND																									
—	M16A2	— R						—	M16A2	— R																									
8/3+ 2 ↓	8/3- 2	6 L		<table border="1"><thead><tr><th>VALUE</th><th>5 MPH</th><th>10 MPH</th><th>15 MPH</th><th>20 MPH</th></tr></thead><tbody><tr><td>SERVICE FULL</td><td>2</td><td>3</td><td>5</td><td>6</td></tr><tr><td>RIFLE HALF</td><td>1</td><td>1</td><td>2</td><td>3</td></tr><tr><td>CARBINE FULL</td><td>2</td><td>4</td><td>7</td><td>9</td></tr><tr><td>CARBINE HALF</td><td>1</td><td>2</td><td>4</td><td>5</td></tr></tbody></table>				VALUE	5 MPH	10 MPH	15 MPH	20 MPH	SERVICE FULL	2	3	5	6	RIFLE HALF	1	1	2	3	CARBINE FULL	2	4	7	9	CARBINE HALF	1	2	4	5	8/3+ 2 ↓	M16A4/M4	6 L
VALUE	5 MPH	10 MPH		15 MPH	20 MPH																														
SERVICE FULL	2	3		5	6																														
RIFLE HALF	1	1	2	3																															
CARBINE FULL	2	4	7	9																															
CARBINE HALF	1	2	4	5																															
6/3+ 6/3-	6/3+ 6/3-						6/3+ 6/3-	6/3+ 6/3-																											
DURING FIRING			PLOT				REMARKS																												
CALL							AIM CENTER MASS 2ND SHOT IT'S COLD OUT HERE STOP SHAKING 3RD SHOT FELT GOOD 4TH SHOT TRIGGER JERK 5TH SHOT FELT GOOD PAY ATTENTION TO THE FUNDAMENTALS!!!!																												
1 2 3																																			
ELEVATION																																			
WINDAGE																																			
4 5																																			
ELEVATION																																			
WINDAGE																																			
AFTER FIRING			WIND			TRUE ZERO																													
FRONT ELEVATION	REAR ELEVATION	WIND	DIRECTION	SPEED				FRONT ELEVATION	REAR ELEVATION	WIND																									
—	M16A2	— R						—	M16A2	— R																									
8/3+ 2 ↓	8/3- 2	6 L		<table border="1"><thead><tr><th>VALUE</th><th>5 MPH</th><th>10 MPH</th><th>15 MPH</th><th>20 MPH</th></tr></thead><tbody><tr><td>SERVICE FULL</td><td>2</td><td>3</td><td>5</td><td>6</td></tr><tr><td>RIFLE HALF</td><td>1</td><td>1</td><td>2</td><td>3</td></tr><tr><td>CARBINE FULL</td><td>2</td><td>4</td><td>7</td><td>9</td></tr><tr><td>CARBINE HALF</td><td>1</td><td>2</td><td>4</td><td>5</td></tr></tbody></table>				VALUE	5 MPH	10 MPH	15 MPH	20 MPH	SERVICE FULL	2	3	5	6	RIFLE HALF	1	1	2	3	CARBINE FULL	2	4	7	9	CARBINE HALF	1	2	4	5	8/3+ 2 ↓	M16A4/M4	6 L
VALUE	5 MPH	10 MPH		15 MPH	20 MPH																														
SERVICE FULL	2	3		5	6																														
RIFLE HALF	1	1	2	3																															
CARBINE FULL	2	4	7	9																															
CARBINE HALF	1	2	4	5																															
6/3+ 6/3-	6/3+ 6/3-						6/3+ 6/3-	6/3+ 6/3-																											

****WINDAGE AND ELEVATION ADJUSTMENTS AT 200 yds:
WINDAGE 1 CLICK = 1"

REAR SIGHT ELEVATION M16A2 1 CLICK = 2" M16A4 1 CLICK = 1" M4 1CLICK= 1 1/2"

FRONT SIGHT ELEVATION SERVICE RIFLE 1 CLICK= 2-3/4" CARBINE 1 CLICK= 3-



ADJUSTMENTS

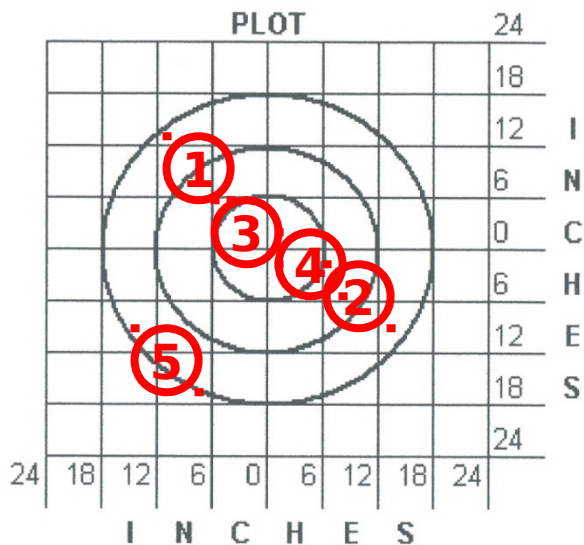


MAKE ADJUSTMENTS OFF
OF GROUPS NOT SINGLE
SHOTS !!!!!



OTHER WAYS OF CALLING SHOTS AND USING REMARKS BOX

DURING FIRING			
CALL			
	1	2	3
ELEVATION			
WINDAGE			
	4	5	
ELEVATION			
WINDAGE			
AFTER FIRING			



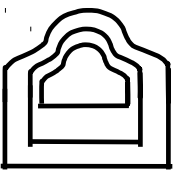
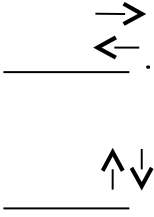
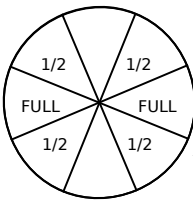
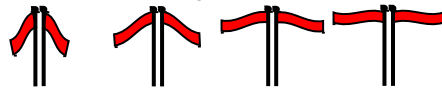

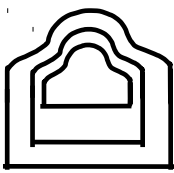
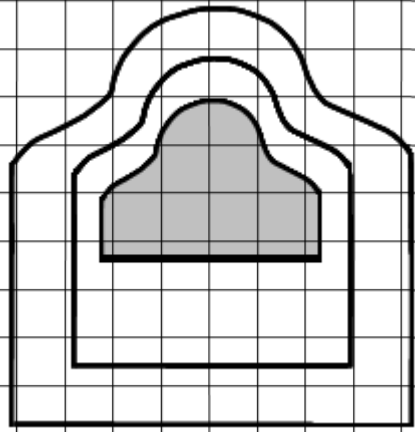
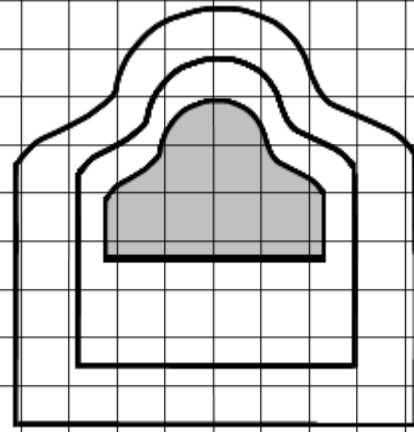
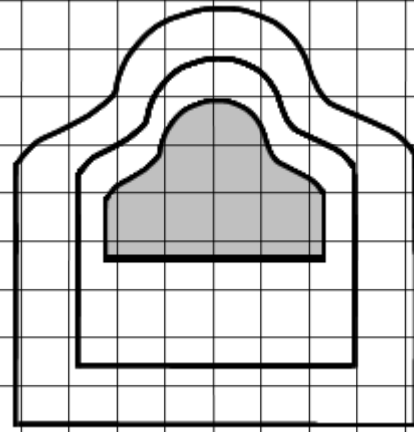
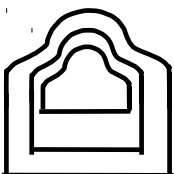
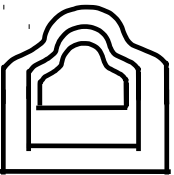
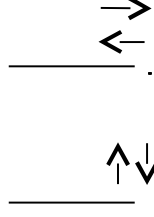
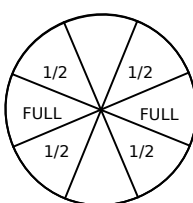


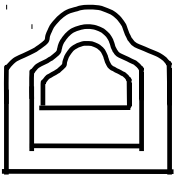
REMARKS
<p>1. TRIGGER JERK</p> <p>2. STARED AT TARGET</p> <p>5. SIGHT PICTURE!!!!</p>



QUESTIONS?

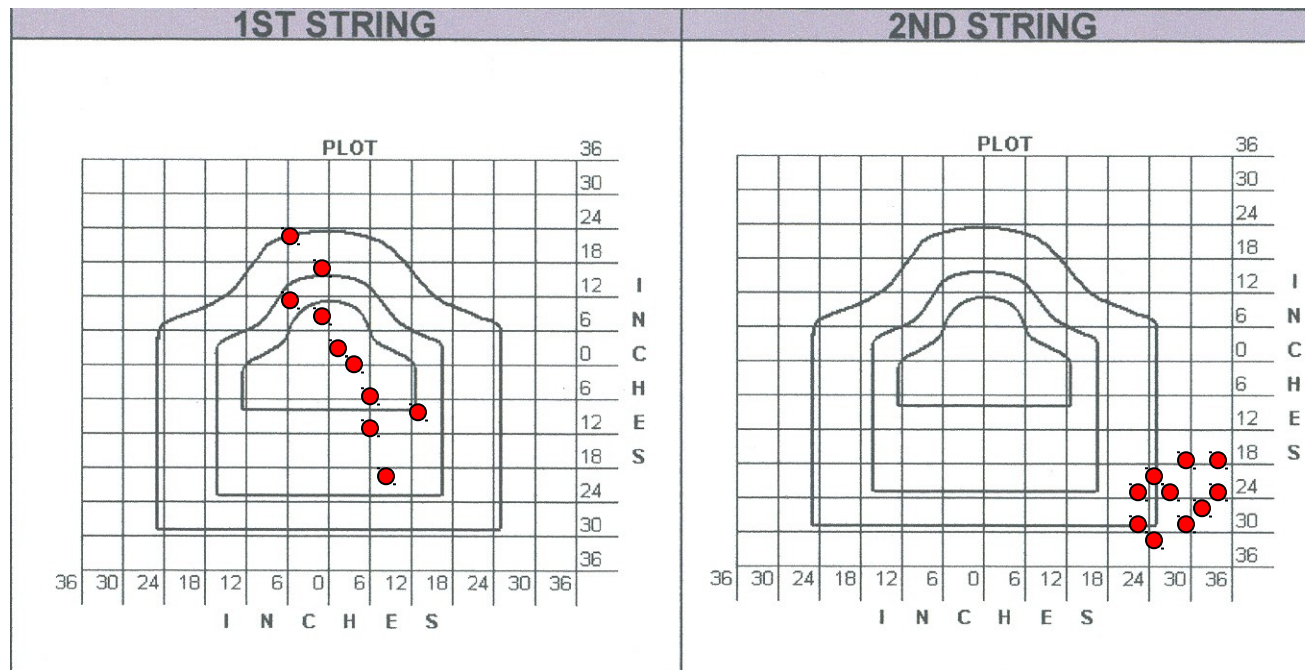


• RECORDING DATA FOR RAPID FIRE STAGES

BEFORE FIRING		200-YARD RAPID FIRE (DAY ONE)				SITTING																										
NO WIND HOLD		PLUS		WIND		= WITH WIND HOLD																										
		<p>DIRECTION</p> 		<p>SPEED</p> 																												
		<p>SERVICE RIFLE CARBINE</p>		<table border="1" style="margin: auto;"> <thead> <tr> <th>VALUE</th> <th>5 MPH</th> <th>10 MPH</th> <th>15 MPH</th> <th>20 MPH</th> </tr> </thead> <tbody> <tr> <td>FULL</td> <td>2</td> <td>5</td> <td>7</td> <td>9</td> </tr> <tr> <td>HALF</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> <tr> <td>FULL</td> <td>3</td> <td>5</td> <td>8</td> <td>10</td> </tr> <tr> <td>HALF</td> <td>1</td> <td>2</td> <td>4</td> <td>5</td> </tr> </tbody> </table>		VALUE	5 MPH	10 MPH	15 MPH	20 MPH	FULL	2	5	7	9	HALF	1	2	3	4	FULL	3	5	8	10	HALF	1	2	4	5		
VALUE	5 MPH	10 MPH	15 MPH	20 MPH																												
FULL	2	5	7	9																												
HALF	1	2	3	4																												
FULL	3	5	8	10																												
HALF	1	2	4	5																												
P L O T		P L O T		P L O T		REMARKS																										
																																
INCHES		INCHES		INCHES		2 ND STRING HOLD																										
36 30 24 18 12 6 0 6 12 18 24 30 36		36 30 24 18 12 6 0 6 12 18 24 30 36		36 30 24 18 12 6 0 6 12 18 24 30 36		36 30 24 18 12 6 0 6 12 18 24 30 36																										
AFTER FIRING																																
CORRECT HOLD		MINUS		WIND		= NEW NO WIND HOLD																										
		<p>DIRECTION</p> 		<p>SPEED</p> 																												
		<p>SERVICE RIFLE CARBINE</p>		<table border="1" style="margin: auto;"> <thead> <tr> <th>VALUE</th> <th>5 MPH</th> <th>10 MPH</th> <th>15 MPH</th> <th>20 MPH</th> </tr> </thead> <tbody> <tr> <td>FULL</td> <td>2</td> <td>5</td> <td>7</td> <td>9</td> </tr> <tr> <td>HALF</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> <tr> <td>FULL</td> <td>3</td> <td>5</td> <td>8</td> <td>10</td> </tr> <tr> <td>HALF</td> <td>1</td> <td>2</td> <td>4</td> <td>5</td> </tr> </tbody> </table>		VALUE	5 MPH	10 MPH	15 MPH	20 MPH	FULL	2	5	7	9	HALF	1	2	3	4	FULL	3	5	8	10	HALF	1	2	4	5		
VALUE	5 MPH	10 MPH	15 MPH	20 MPH																												
FULL	2	5	7	9																												
HALF	1	2	3	4																												
FULL	3	5	8	10																												
HALF	1	2	4	5																												



COMPARING STRINGS ACROSS DATA BOOK PAGES AND STAGES



BREATHING !!!!!!!

**NATURAL RESP
PAUSE**

TAKE YOUR TIME

**PRACTICE
FUNDS!!!!!!**

GOOD GROUP

**NEEDS A SIGHT
ADJUSTMENT**



SUMMARY



- IMPORTANCE OF THE DATA BOOK TO THE SHOOTER
- IMPORTANCE OF THE DATA BOOK TO THE COACH
- DATA BOOK ANALYSIS



Effects of Weather





OVERVIEW



- Effect of weather on shooting and the shooter.
- Effect of wind.
- Wind classification.
- Wind velocity.
- Determination of correct windage adjustments.
- Effects of different lighting conditions, temperatures, and precipitation on the shooter.
- The rifle, and the trajectory of the bullets.



EFFECTS OF WEATHER ON THE MARINE



- Mental attitude
 - Must have the ability to mentally adjust to unusual or adverse weather conditions.
- Physical
 - Must be prepared for the weather so he/she is comfortable when shooting.



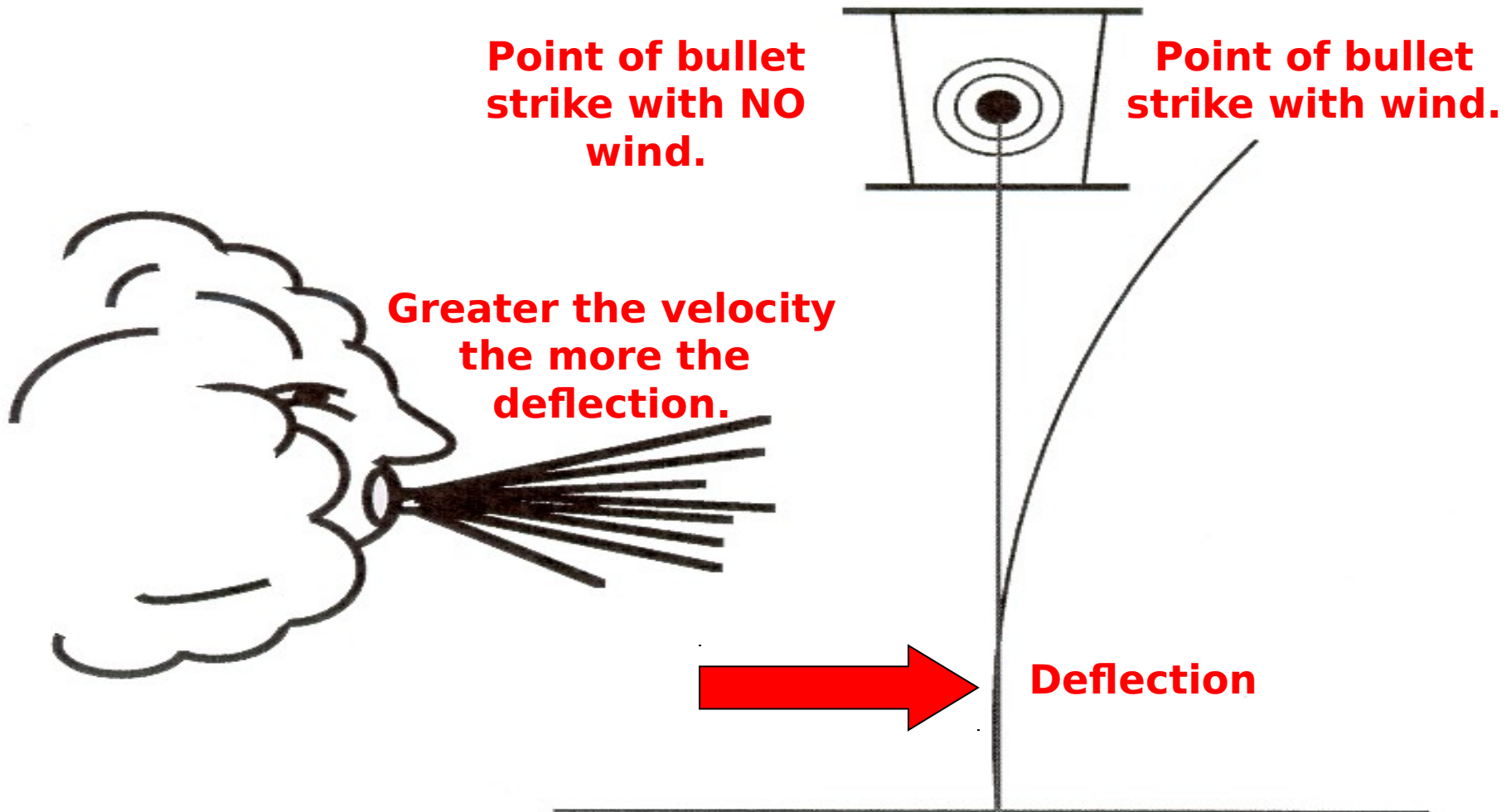
EFFECTS OF WIND



- On the Marine
 - Effect depends on velocity and firing position.
 - Stronger the wind, harder to hold weapon steady.
 - Choose a position that is least susceptible to the effect of wind.
 - Counteract by timing your shots.
 - Effects can be partially offset by training and a positive mental attitude.



EFFECTS OF WIND ON THE BULLET



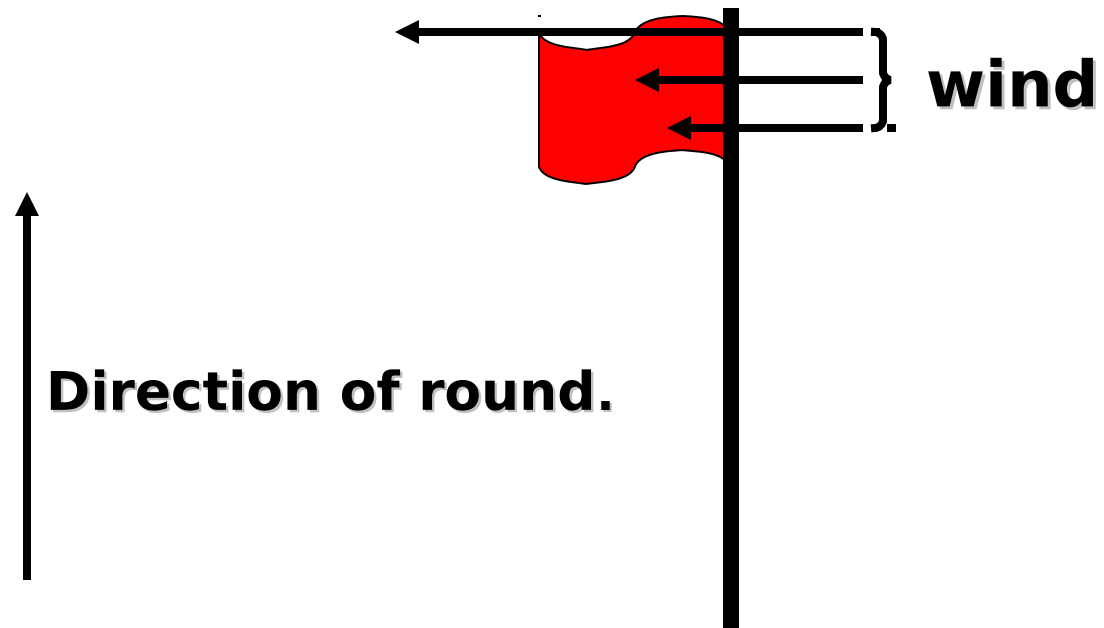


WIND CLASSIFICATION



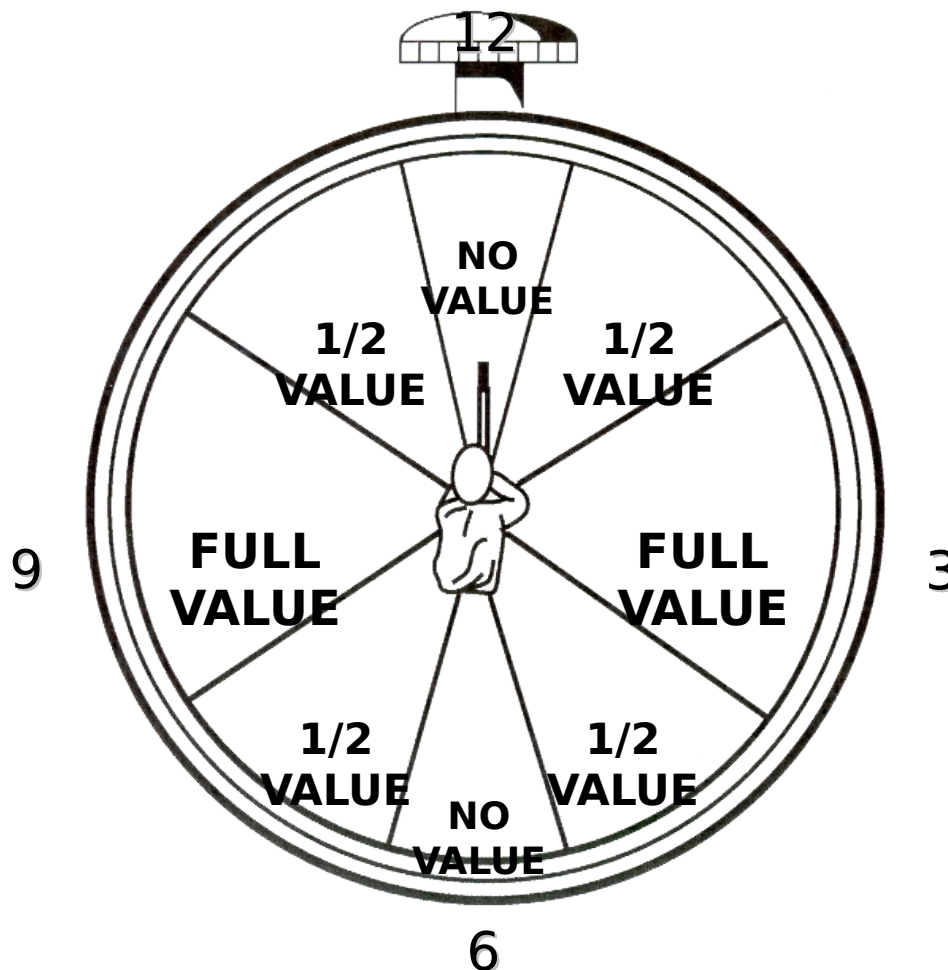
- Wind direction
 - Classified according to the direction from which they are blowing in relation to the direction of fire.

**Example of
a right wind**





THE CLOCK SYSTEM





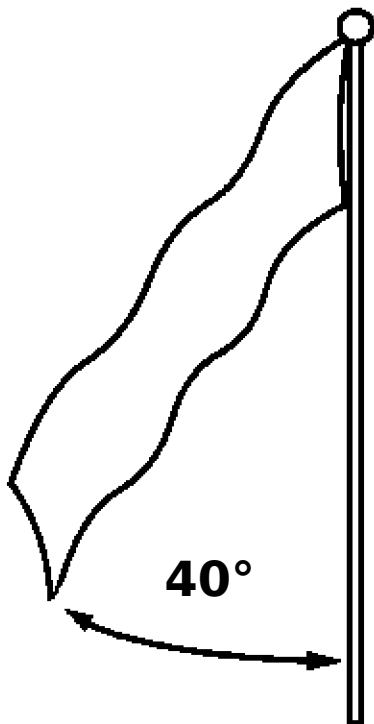
DETERMINING WIND VELOCITY



- Observation method:
 - 3 mph- wind hardly felt.
 - 3 to 5 mph- wind lightly felt on face.
 - 5 to 8 mph- wind keeps tree leaves in constant motion.
 - 12 to 15 mph- wind causes small trees to sway.
 - 15 to 25 mph- wind causes large trees to sway.



THE FLAG METHOD



WIND
←

**WIND VELOCITY
FORMULA**

$$\frac{\text{ANGLE OF FLAG}}{4} = \text{MPH}$$

$$\frac{40^\circ}{4} = 10 \text{ MPH}$$



EFFECTS OF DIFFERENT LIGHT CONDITIONS



- HAZE
 - SMOG, FOG, DUST, OR HUMIDITY.
 - HAZE CAN MAKE THE TARGET APPEAR INDISTINCT.
 - HAZY CONDITIONS MAKE IT DIFFICULT TO ESTABLISH A PROPER SIGHT PICTURE.



EFFECTS OF DIFFERENT LIGHT CONDITIONS



- OVERCAST
 - WHEN A SOLID LAYER OF CLOUDS IS BLOCKING THE SUN
 - LIGHT OVERCAST
 - WHEN NO BLUE SKY IS VISIBLE AND A THIN LAYER OF CLOUDS IS PRESENT
 - DARK HEAVY OVERCAST
 - WHEN THE SKY IS COMPLETELY OVERCAST WITH MOST OF THE SUN BLOCKED OUT BY THE CLOUDS.



EFFECTS OF DIFFERENT LIGHT CONDITIONS



- SCATTERED CLOUDS
 - EXISTS WHEN THE CLOUDS ARE BROKEN UP INTO SMALL PATCHES WITH THE SUN APPEARING AT TIMES BETWEEN THE CLOUDS.
 - YOUR EYES MAY HAVE PROBLEMS ADJUSTING BETWEEN A TARGET THAT IS BRIGHTLY LIT AND ONE THAT IS SHADOWED.



EFFECTS OF DIFFERENT LIGHT CONDITIONS



- MOVING CLOUDS
 - EXIST WHEN SCATTERED CLOUDS MOVE ACROSS THE SKY RAPIDLY, MAKING THE SUN APPEAR PERIODICALLY.
 - MOVING CLOUDS CAN FATIGUE THE EYES DUE TO THE RAPID CHANGES IN LIGHT ON THE TARGET.
 - TIME YOUR SHOTS AND ATTEMPT TO FIRE EACH SHOT UNDER THE SAME LIGHT CONDITIONS.



EFFECTS OF DIFFERENT TEMPERATURES



- EFFECTS OF EXTREME HEAT
 - THE SHOOTER
 - HIGH TEMPERATURES LEAD TO RAPID FATIGUE.
 - CAUSE MUSCLE CRAMPS, HEAT EXHAUSTION, AND HEAT STROKE.
 - TARGET/FRONT SIGHT POST
 - GROUND MIRAGES CAN CAUSE DISTORTION OF THE TARGET SHAPE OR THE APPEARANCE OF THE FRONT SIGHT POST.
 - THE RIFLE AND BULLET
 - INCREASE IN CHAMBER PRESSURE
 - HIGHER VELOCITY CAUSES HIGHER IMPACTS ON YOUR TARGET



EFFECTS OF DIFFERENT TEMPERATURES



- EFFECTS OF EXTREME COLD ON:
 - THE SHOOTER
 - CAUSES THE SHOOTER TO SHIVER, BE UNCOMFORTABLE, HAVE LAPSES IN MEMORY, AND FROSTBITE.
 - MAY MAKE IT DIFFICULT TO HOLD THE RIFLE AND PERFORM TRIGGER CONTROL.
 - THE RIFLE AND BULLET
 - IN COLD WEATHER THE CHAMBER PRESSURE WILL DECREASE, CAUSING LOWER MUZZLE VELOCITY, WHICH WILL THEN CAUSE THE BULLET TO IMPACT LOWER ON THE TARGET.



EFFECTS OF PRECIPITATION



- EFFECTS OF PRECIPITATION ON:
 - THE SHOOTER
 - WILL EFFECT CONCENTRATION AND COMFORT
 - THE RIFLE AND THE BULLET
 - WEAPON BECOMES DIFFICULT TO HANDLE
 - CAUSES STOPPAGES
 - WATER BUILDUP IN THE BARREL OR COMPENSATOR WILL CAUSE ERRATIC SHOTS.



INSTRUCTIONS



- Troubleshooting /compensating for the effects of weather.
 - Understand wind conditions particular to individual ranges.
 - Windage chart may be off .
 - Tree lines.
 - No two ranges are exactly alike
 - Terrain, structure, range flag
 - Coach should let his shooters know about wind HOLDS from range experience.
 - Flags can be altered.





INSTRUCTIONS



- Troubleshooting problems compensating for wind
 - Reinforce procedures for reading wind.
 - WIND HOLDS.
 - Chasing the spotter.
 - Shots impacting right or left.
 - Compare shooters' data books for wind.
 - Coach records wind for relays / yard line.





ADJUSTING POSITIONS IN WINDY CONDITIONS



- Find the most stable position.
 - Wait for wind to settle.
 - Aggressive stance during standing.
 - Push non firing elbow outboard.
- Remind shooters of light conditions.
- Troubleshoot dramatic wind or elevation changes on qualification day.
 - Wind
 - Light



SUMMARY



- Effect of weather on shooting and the shooter.
- Effect of wind.
- Wind classification.
- Wind velocity.
- Determination of correct windage adjustments.
- Effects of different lighting conditions, temperatures, and precipitation on the shooter.
- The rifle, and the trajectory of the bullets.

[MAIN](#)
[NEXT](#)



PIT OPERATIONS / SCORING PROCEDURES



OVERVIEW

- THIS LESSON WILL COVER PIT OPERATIONS AND SCORING PROCEDURES.



PIT OPERATIONS / SCORING PROCEDURES



PIT NCO

- IS RESPONSIBLE TO THE RANGE OFFICER FOR PIT OPERATIONS.
- HE OVERSEES AND CONTROLS ALL PIT OPERATIONS AND ENFORCES PIT REGULATIONS.



PIT OPERATIONS / SCORING PROCEDURES



ASSISTANT PIT NCO

- ⊕ ASSISTS THE PIT NCO IN
PERFORMANCE OF HIS DUTIES.

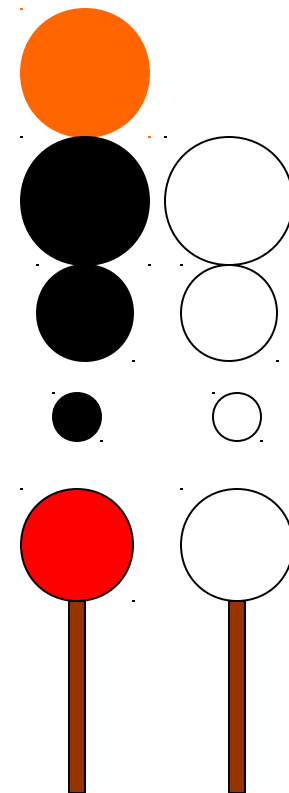


PIT OPERATIONS / SCORING PROCEDURES



SCORING DISK AND SHOT SPOTTERS USED

- 10 INCH RED OR ORANGE INTERNATIONAL SCORING DISK
- 10 INCH BLACK AND WHITE SHOT SPOTTER
- 5 INCH BLACK AND WHITE SHOT SPOTTER
- 3 INCH BLACK AND WHITE SHOT SPOTTER
- RED AND WHITE SCORING DISK (LOLLIPOP)

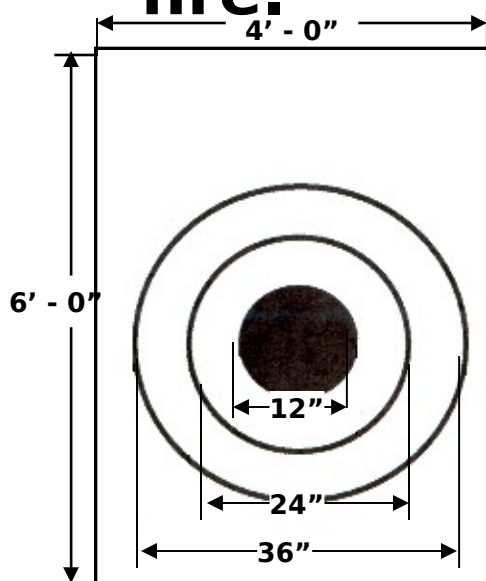




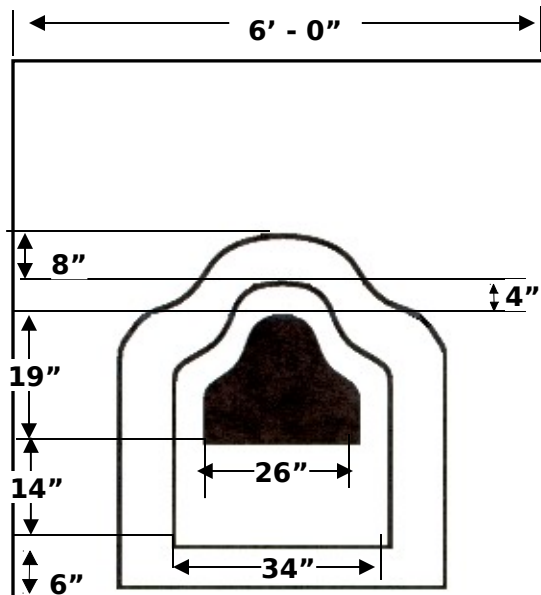
PIT OPERATIONS / SCORING PROCEDURES



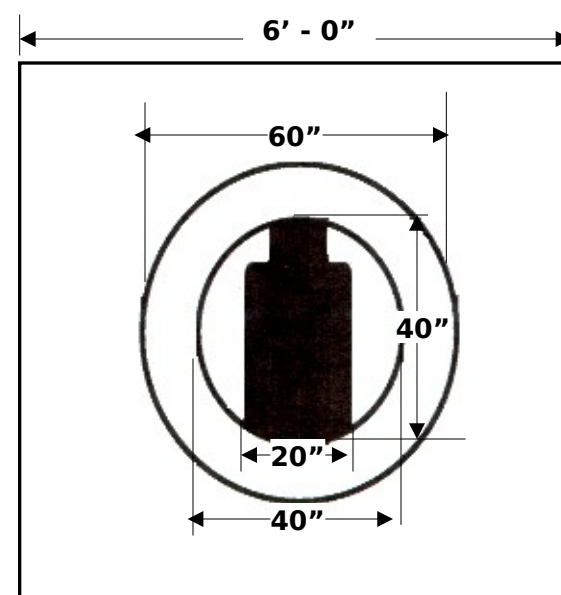
Target dimensions for Table 1 course of fire.



"A" TARGET



"D" TARGET



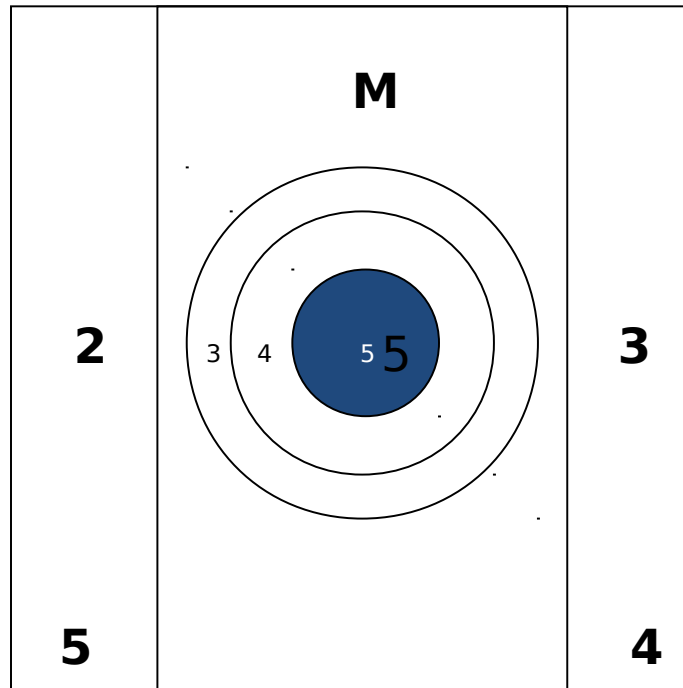
**"B" MODIFIED
TARGET**



PIT OPERATIONS / SCORING PROCEDURES



How you will place an international scoring disk on an “A” target.

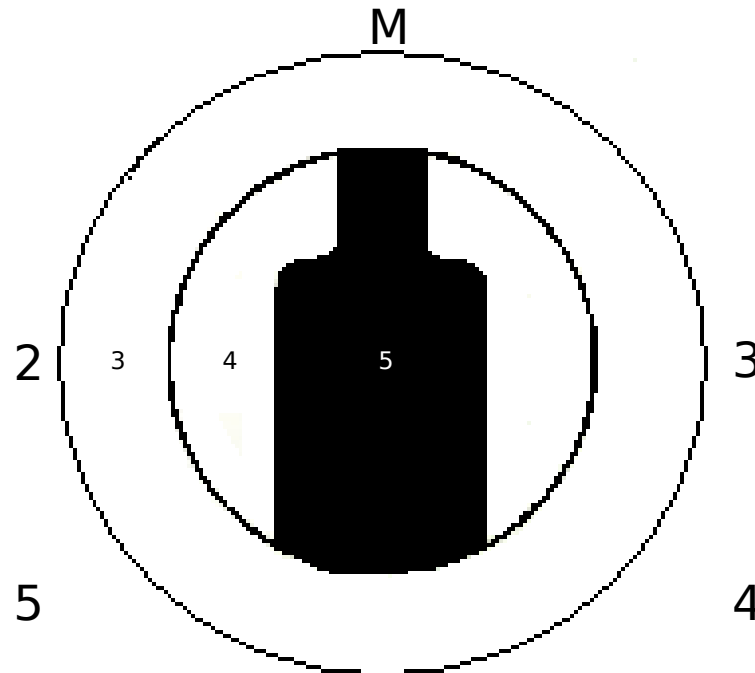




PIT OPERATIONS / SCORING PROCEDURES



**How you will place an
international scoring disk on a
“B- Modified” target**





PIT OPERATIONS / SCORING PROCEDURES



SUMMARY

- ⊕ **Pit NCO.**
- ⊕ **Assistant Pit NCO.**
- ⊕ **Scoring disk and shot spotters used.**
- ⊕ **Target dimensions.**
- ⊕ **Scoring an “A” target.**
- ⊕ **Scoring a “DOG” target**
- ⊕ **Scoring a “B- MOD” target.**

MAIN

NEXT



RIFLE ALIBI PROCEDURES





OVERVIEW



- ALIBI PROCEDURES
- DETERMINATION OF ALIBIS



PRE-FIRING RESPONSIBILITIES



PREPARATION OF WEAPONS AND EQUIPMENT:

- PREVENTATIVE MAINTENANCE**
- USER SERVICEABILITY INSPECTION**
- INSPECTION OF AMMUNITION**
- WEARING OF GEAR**



RIFLE ALIBI PROCEDURES



- WILL BE AWARDED DURING QUALIFICATION AND REQUALIFICATION
- NOT AWARDED FOR SHOOTER ERROR



RIFLE ALIBI PROCEDURES



DEFINITIONS

ALIBI - An alibi is any condition caused by the weapon, ammunition, or range operation that causes the shooter not to have an opportunity equal to all the other shooters on the range to complete a string of fire.



RIFLE ALIBI PROCEDURES



DEFINITIONS

- STOPPAGE- A stoppage is an unintentional interruption in the cycle of operation of the weapon.
- MALFUNCTION- Failure of the weapon to operate satisfactorily or as the manufacturer intended.
- SHOOTER ERROR- A shooter error is any action on the part of the shooter that causes his weapon to fail to fire.



RIFLE ALIBI PROCEDURES



WHAT CONSTITUTES AN ALIBI?

- WEAPON MALFUCTION
- FAULTY AMMUNITION
- TARGET MALFUNCTION



RIFLE ALIBI PROCEDURES



WHAT DOES NOT CONSTITUTE AN ALIBI?

- **SHOOTER ERROR**
 - GENERAL REASONS
 - BEFORE FIRING
 - DURING FIRING



RIFLE ALIBI PROCEDURES



DETERMINATION OF ALIBIS

- **KEY ELEMENTS**
 - **KNOWLEDGE**
 - **JUDGEMENT**
 - **INTEGRITY**



RIFLE ALIBI PROCEDURES



DETERMINATION OF ALIBIS

- POSITION OF COACH
 - THE COACH IS YOUR ADVOCATE. MAKE SURE HE/SHE IS ATTENTIVE TO YOUR ACTIONS
- MAKE SURE YOU DO-
 - PREVENTATIVE MAINTENANCE / SERVICEABILITY INSPECTION
 - REMEDIAL ACTION/IMMEDIATE ACTION



RIFLE ALIBI PROCEDURES



DETERMINATION OF ALIBIS

- ALIBI CHAIN OF COMMAND
 - COACH: Notifies block NCO of firing points that rate an alibi.
 - BLOCK NCO: Makes final determination of alibis and will notify the tower NCO.
 - RSO: Will be notified by the block NCO if there are any persisting questions about shooters rating alibis.



RIFLE ALIBI PROCEDURES



SUMMARY

- **PRE-FIRING RESPONSIBILITY**
- **ALIBI PROCEDURES**
- **DETERMINATION OF ALIBIS**

[MAIN](#)
[NEXT](#)



Hand and Arm Signals





- CHAIN OF COMMAND
 - Coach – monitors his shooters
 - Block NCO – monitors his coaches
 - Tower NCO – observes blocks, coaches, shooters, and relays commands to pits
- POSITION ON THE FIRING LINE
 - Coach – step back away from ready line
 - Block NCO – position to the rear of his block of targets
- CONFIRMATION OF SIGNAL
 - Block NCO – verbally confirm coach's signal
 - Tower NCO – either point to block or verbal acknowledgment
 - Be aware that the block may give more than one signal.

- Range personnel or shooters signals tower with clipboard
- Block NCO – uses paddle or clipboard
 - Paddle – green on one side red on the other
- Clipboard – target number printed on it
 - Number displayed
 - Arms crossing, out board over inboard
 - Every target point has it's own clipboard
 - Step away from ready line
- Paddle signals
 - Green – completion of a command
 - Red – problem with completing a command



MARK TARGET



Coach or Shooter

DOWN RANGE





RE - DISK



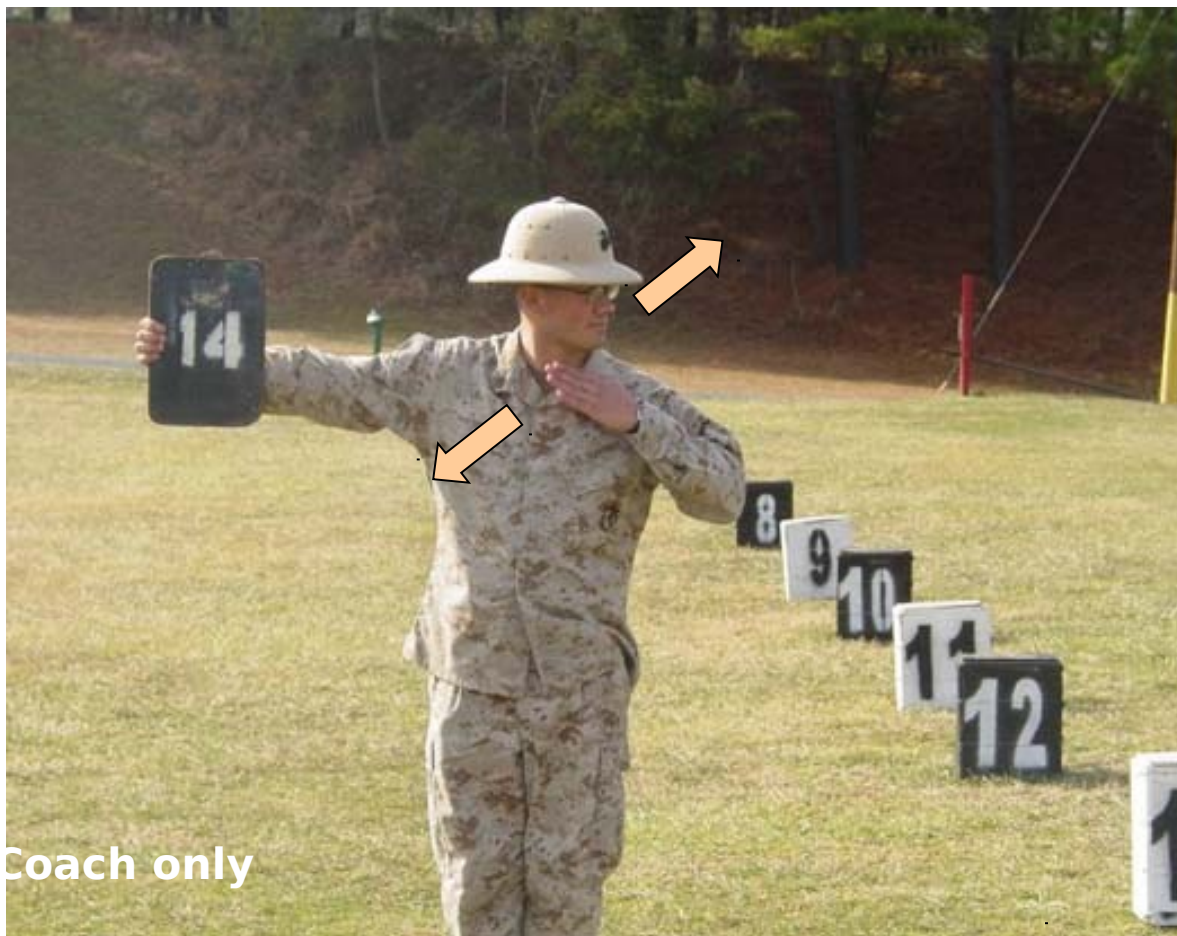
Coach or Shooter

DOWN RANGE





DISREGARD



Coach only

DOWN RANGE

